

India (Republic of)

## PROPOSAL FOR PRELIMINARY VIEWS ON WRC-27 AGENDA ITEM 1.19

Agenda Item 1.19:

to consider possible primary allocations in all Regions to the Earth exploration-satellite service (passive) in the frequency bands 4 200-4 400 MHz and 8 400-8 500 MHz, in accordance with Resolution 674 (WRC-23).

Resolution 674 (Rev.WRC-23):

Studies on possible allocations to the Earth exploration-satellite service (passive) in the bands 4 200-4 400 MHz and 8 400-8 500 MHz.

## **Background:**

Agenda Item 1.19 of the World Radiocommunication Conference in 2027 (WRC-27) focuses on considering possible primary allocations in all ITU Regions to the Earth exploration-satellite service (EESS passive) in the frequency bands 4200-4400 MHz and 8400-8500 MHz. This agenda item originates from Resolution 674 (Rev.WRC-23), which recognized the increasing importance of passive Earth observation in these specific bands and called for ITU Radiocommunication Sector (ITU-R) studies to explore the feasibility and implications of such primary allocations.

Earth exploration-satellite service (passive), relies on measuring naturally emitted radiation from the Earth to derive critical geophysical parameters. The frequency bands 4200-4400 MHz and 8400-8500 MHz are particularly important for passive microwave radiometry. Measurements in these bands provide essential data for:

- a. Soil moisture content Crucial for agriculture, hydrology, and climate modeling.
- b. Sea surface salinity For understanding ocean circulation and climate change.
- c. Snow cover and ice properties For water resource management and climate studies.
- d. Atmospheric temperature and humidity profiling Essential for weather forecasting and climate monitoring.

Currently, in most Regions, the EESS (passive) in these bands has a secondary allocation or is accommodated under footnotes that provide some level of protection but do not guarantee it against interference from primary services. As the demand for spectrum from active services continues to grow, the potential for harmful interference to these sensitive passive measurements increases.

Resolution 674 (Rev.WRC-23) acknowledges the critical scientific and societal value of the data obtained by EESS (passive) in these bands. It mandates ITU-R studies to:

- i. Assess the current and future spectrum requirements of EESS (passive) in the 4200-4400 MHz and 8400-8500 MHz bands.
- ii. Analyze the potential impact of primary allocations to EESS (passive) on existing and planned services in these and adjacent bands.
- iii. Investigate sharing and compatibility issues between EESS (passive) and active services, considering various mitigation techniques.
- iv. Develop recommendations on possible primary allocations to EESS (passive) in these bands, taking into account the needs of all affected services and Regions.

The outcome of these ITU-R studies will be crucial in informing the discussions at WRC-27 on whether to upgrade the status of EESS (passive) in these key frequency bands to primary, thereby providing it with stronger regulatory protection against interference.

## India's Preliminary Views:

India supports the principle of providing primary allocations to the Earth exploration-satellite service (passive) in the frequency bands 4200-4400 MHz and 8400-8500 MHz in all Regions, for vital scientific and societal contributions of passive Earth observation and the need to ensure the long-term availability of these critical frequency bands for these purposes.